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REMARKS

Claims 2-10 and 12-18 are pending. Claims 1 and 11 have been cancelled. Claims 2-3 and 12-13 have been amended. No new matter has been added.

Applicant notes with appreciation the allowance of claims 9, 10 and 18.

Claims 1-8 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for including the limitation "the at least one test pattern" without antecedent basis. Applicant submits that this informality has been corrected with amendments to claims 2-3.

The Examiner indicated that claims 3-8 and 13-17 were objected to as dependent on a rejected base claim, but would be allowable if rewritten to include all the limitations of the rejected base claim and any intervening claims. Applicant submits that new independent claim 3 has been so re-written. Accordingly, Applicant respectfully submits that claim 3 and claim 6, which depends directly from claim 3, are allowable.

Claims 1 and 11 were rejected as unpatentable under 35 U.S.C. §102(b) as unpatentable over U.S. Patent No. 5,548,399 to Takai et al., ("Takai"). Claims 1 and 11 have been canceled.

Claims 2 and 12 were rejected under 35 U.S.C. §103 as obvious over Takai in view of 40 *Gbig/s all-optical wavelength converter and RZ-to-NRZ format adapter realized by monolithic integrated active Michelson interferometer* by Mikkelsen et al., ("Mikkelsen"). Applicant respectfully traverses the rejections.

Claim 2 has been amended to include the limitations of the canceled claim 1. Claim 2 as amended is directed to a bit error rate tester. The tester includes an optical multiplexer for multiplexing a plurality of input signals and supplying a plurality of test pattern data signals for injection into a device under test; an optical pulse source from which an optical pulse stream is provided to the optical multiplexer to be modulated with at least one test pattern data signal multiplexed therein; and an optical demultiplexer for demultiplexing a recovered data signal from the device under test. Applicant agrees that Takai discloses a bit error rate test setup including a multiplexer, e.g., 130 in Fig. 5. Applicant also acknowledges that Takai discloses multiplexing a plurality of input signals, e.g., a modulated signal from the optical signal

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generator 100 and a DC signal from the stabilized dc light emitter 140. Applicant further acknowledges that the optical signal generator 100 of Takai is an optical pulse source from which an optical pulse stream is provided to the optical multiplexer. However, Applicant submits that Takai does not disclose an optical demultiplexer for demultiplexing a recovered data signal from the device under test.

The Examiner acknowledges that Takai does not disclose an optical demultiplexer for demultiplexing a recovered data signal from the device under test. The Examiner indicates that Mikkelsen discloses this limitation and that it would be obvious for one of ordinary skill in the art to combine the demultiplexer of Mikkelsen with the testing apparatus of Takai because, "Mikkelsen teaches that better performance is achieved by demultiplexing the received signals." The Examiner further indicates that the combination of the demultiplexer of Mikkelsen with the testing apparatus of Takai would have been motivated "to employ a method capable of achieving better bit error rate performance by utilizing a demultiplexer."

Applicant respectfully submits that it would not be obvious to combine Mikkelsen and Takai in the way suggested by the Examiner since doing so would defeat the purpose of the test setup of Takai. Takai discloses a method and apparatus for testing a DC coupled optical receiver. (Col 1, lines 1-2) In the test setup of Takai, optical AC signals are outputted from a 9-channel optical signal generator and are superimposed on DC light through an array of multiplexers. (Col. 4, lines 46-50) The DC coupled signal is then converted to an electrical signal by a DC coupled optical receiver. (Col. 2, lines 59-61) The bit error rate of the recovered electrical DC coupled signal is then measured as a function of DC optical power. (Col. 2, lines 59-61; Col 3, lines 10-12; Fig. 4) Accordingly, the bit error rate test setup of Takai requires providing a *combined* DC and AC optical signal to an optical receiver and measuring the bit error rate of the resultant *combined* DC and AC electrical signal. Since Takai discloses measuring the bit error rate of a combined DC and AC signal, Applicant submits that it would not be obvious to one having ordinary skill in the art to combine the demultiplexer of Mikkelsen with the test setup of Takai since doing so would separate the DC and AC signals, which would

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defeat Takai's purpose of evaluating the performance of a DC coupled optical receiver. Indeed, Takai teaches away from such an arrangement.

Since it would not be obvious to combine the demultiplexer of Mikkelsen with the DC coupled optical receiver test setup of Takai, Applicant respectfully submits that Claim 2 as amended is allowable over any obvious combination of Takai and Mikkelsen. Since claims 4, 5, 7, and 8 depend either directly or indirectly from claim 2, Applicant submits that these claims are allowable for at least the reasons claim 2 is allowable.

Claim 12 has been amended to include the limitations of the cancelled claim 11. Claim 12 as amended requires a method of bit error rate testing. The method requires optically multiplexing a plurality of test pattern data signals for injection into a device under test and optically demultiplexing a recovered data signal from the device under test. The Examiner indicates that the method of claim 12 is disclosed by an obvious combination of the DC coupled optical receiver test setup of Takai and the demultiplexer of Mikkelsen. Applicant respectfully submits that for the reasons set forth above with respect to claim 2, the combination recited by the Examiner is not obvious. Indeed, Takai teaches away from such a combination. Takai discloses measuring the bit error rate of a recovered electrical DC coupled signal, i.e. a combined AC and DC signal, as a function of DC optical power. (Col. 2, lines 59-61; Fig. 4) Incorporating a demultiplexer to separate out the DC and AC components of the electrical signal generated by the optical receiver of Takai would defeat Takai's purpose of measuring the bit error rate of a DC coupled signal.

Since it would not be obvious to combine the demultiplexer of Mikkelsen with the DC coupled optical receiver test setup of Takai, Applicant respectfully submits that Claim 12 as amended is allowable over any obvious combination of Takai and Mikkelsen. Since claims 13-17 depend either directly or indirectly from claim 12, Applicant submits that these claims are allowable for at least the reasons claim 12 is allowable.

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Respectfully submitted,

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1/19/05



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